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EXAMINER	
GREENE, JOSEPH L	
ART UNIT	PAPER NUMBER
2151	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/821,082	POLAN, MICHAEL G.	
	Examiner	Art Unit	
	JOSEPH L. GREENE	2151	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE ____ MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *10 April 2008*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-18* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-18* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *04/08/2004* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *04/08/2004*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☒ Other: *Google Scholar Search History, SETI@home (NPL)*.

DETAILED ACTION

1. Claims 1 – 18 are currently pending in this application.

2. Claims 1-4, 6-9, and 12-18 are currently amended as filed on 04/10/2008.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

4. Claims 1-2 are rejected under 35 U.S.C. 103(a) as being unpatentable over Verbeke et al. (Pre-Grant Publication No. US 2004/0098447 A1), hereinafter Verbeke, in view of Beeston et al. (Pre-Grant Publication No. US 2005/0050382 A1), hereinafter Beeston.

5. With respect to claim 1, Verbeke taught a manager for use in a system of grid computing (0136, lines 1-12, where the task dispatcher is the task manager) comprising a processor operable to define a computing task based on data received by said processor, said processor further operable to assign a portion of said task to each of a plurality of clients connected to said manager via a network (0136, lines 11-12, where the workers are connected to the task dispatcher via the network), said processor

handling client failure and carrying on with its process (0183, lines 7-13). But Verbeke doesn't explicitly state being further operable to approximate a result of said portion and return said result to said manager, wherein said processor is configured to determine a client failure to return said results based upon at least one condition selecte4d from a group of conditions consisting of: a receipt of a message indicating that the client is no longer connected to the network, a receipt of a message from the client indicating that said result is not forthcoming, and an expiration of a previously defined time delay for said client to provide said result.

However, Beeston did teach being further operable to approximate a result of said portion and return said result to said manager (0056, lines 1-10, where the data block is estimated and thus, the resulting recovered data within the block is approximated), wherein said processor is configured to determine a client failure to return said results based upon at least one condition selecte4d from a group of conditions consisting of: a receipt of a message indicating that the client is no longer connected to the network, a receipt of a message from the client indicating that said result is not forthcoming, and an expiration of a previously defined time delay for said client to provide said result (0056, lines 1-5, where an error condition indicates a result not forthcoming).

Both the systems of Verbeke and Beeston are directed towards systems for distributed computing management and therefore It would have been obvious to a person of ordinary skill, in the art at the time of the invention, to modify the teachings of Verbeke, in order to use data approximation, as taught by Beeston, as a method of

overcoming failure to deliver result. Doing so would provide an efficient procedure of correcting errors due to failure when using the Verbeke device to perform the sorts of calculations implemented by the applicant's device.

6. As for claim 2, the combination of Verbeke and Beeston taught all of the limitations described in claim 1. In addition, Verbeke taught wherein said task is one of plurality of repeatable operations, said task including a plurality of sub-operations, wherein one of said sub-operations is said portion for which said manager approximates the result (0136, lines 1-12, repeatable operations are anticipated because there is nothing to stop a task from occurring more than once and with respect to sub-operations by the nature of grid computing, a single operation is broken down into smaller operations to be carried out by the nodes on the grid), and wherein an approximation of said sub-operation introduces a predefined accepted level of error to a performance of said task (0008, lines 7-10, it is inherent that if there is a fault tolerance, then there must be an associated pre-determined tolerance level).

7. Claims 3, 6, 8-9, and 12-15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Verbeke, in view of Beeston, and in further view of Anderson et al. (Seti@home project), hereinafter Anderson.

8. As for claim 3, the combination of Verbeke and Beeston taught all of the limitations described in claim 2. In addition, Verbeke taught wherein in absence of said

manager approximating the result, said task would situationally have to be restarted and all of said sub-operations performed by said plurality of clients repeated (0142 all, where redundant task at node failure is restarting and repeating). Also, Beeston teaches doing calculations based on computations that failed to return their results (0056, lines 1-5), but the combination of Verbeke and Beeston didn't explicitly state wherein said result is a result of a cycle of a multi-cycle computation, wherein an approximation of said result is based at least in part upon at least one previous result for the multi-cycle computation received from said client or based upon an initial value conveyed to said client from the manager as part of the assigned task for which the client has failed to return said result.

However, Anderson did teach wherein said result is a result of a cycle of a multi-cycle computation, wherein an approximation of said result is based at least in part upon at least one previous result for the multi-cycle computation received from said client (column 1, lines 26-31, where the redundant calculations are part of the SETI@home's cyclic calculation processes) or based upon an initial value conveyed to said client from the manager as part of the assigned task for which the client has failed to return said result (column 1, lines 26-31, where a redundant result is a result that is previous with respect to the one that is being checked at the time).

All of the systems of Verbeke, Beeston, and Anderson are directed towards systems of distributed computing and management thereof and therefore, it would have been obvious to a person of ordinary skill in the art, at the time of the invention, to modify the combination of Verbeke and Beeston, in order to utilize multi-cyclic

calculations, as taught by Anderson, in order to broaden the applications that may be utilized by said system; thus, improving overall marketability.

9. With respect to claim 6, Verbeke taught a method of grid computing comprising the steps of: receiving data respective to a computing task; defining said task based on said received data; assigning a portion of said task to each of a plurality of clients based on said defining step (0136, lines 1-12, all of the above mentioned steps are taking place); awaiting receipt of results of said portions from said clients (0141, lines 8-10). Verbeke also taught handling node failures (0183, lines 7-13) and outputting said results in a pre-defined format (it is inherent that a computer system outputs data in a predefined format. For example: binary code), But Verbeke doesn't explicitly state approximating said results for said determined at least one client and determine a client failure to return said results based upon at least one condition selected from a group of conditions consisting of: a receipt of a message indicating that the client is no longer connected to the network, a receipt of a message from the client indicating that said result is not forthcoming, and an expiration of a previously defined time delay for said client to provide said result and wherein an approximating of each result is based in part upon at least one previous result received from said client that failed to return said result or based upon an initial value conveyed to said client that failed to return said result from the manager as part of the assigned task for which the client has failed to return said result and compiling said received results.

However, Beeston did teach approximating said results for said determined at least one client and determine a client failure to return said results based upon at least one condition selected from a group of conditions consisting of: a receipt of a message indicating that the client is no longer connected to the network, a receipt of a message from the client indicating that said result is not forthcoming, and an expiration of a previously defined time delay for said client to provide said result (0056, lines 1-10, where the data block is estimated and thus, the resulting recovered data within the block is approximated and where an error condition indicates a result not forthcoming). Both the systems of Verbeke and Beeston are directed towards systems for distributed computing management and therefore It would have been obvious to a person of ordinary skill, in the art at the time of the invention, to modify the teachings of Verbeke, in order to use data approximation, as taught by Beeston, as a method of overcoming failure to deliver result. Doing so would provide an efficient procedure of correcting errors due to failure when using the Verbeke device to perform the sorts of calculations implemented by the applicant's device.

The combination of Verbeke and Beeston, however, did not explicitly state wherein an approximating of each result is based in part upon at least one previous result received from said client that failed to return said result or based upon an initial value conveyed to said client that failed to return said result from the manager as part of the assigned task for which the client has failed to return said result and compiling said received results. However, Anderson did teach wherein an approximating of each result is based in part upon at least one previous result received from said client that failed to

return said result or based upon an initial value conveyed to said client that failed to return said result from the manager as part of the assigned task for which the client has failed to return said result and compiling said received results (column 1, lines 26-31, where the redundant calculations are part of the SETI@home's cyclic calculation processes) or based upon an initial value conveyed to said client from the manager as part of the assigned task for which the client has failed to return said result (column 1, lines 26-31, where a redundant result is a result that is previous with respect to the one that is being checked at the time).

All of the systems of Verbeke, Beeston, and Anderson are directed towards systems of distributed computing and management thereof and therefore, it would have been obvious to a person of ordinary skill in the art, at the time of the invention, to modify the combination of Verbeke and Beeston, in order to utilize multi-cyclic calculations, as taught by Anderson, in order to broaden the applications that may be utilized by said system; thus, improving overall marketability.

10. As for claim 8, the combination of Verbeke, Beeston, and Anderson taught all of the limitations described in claim 6. In addition, Verbeke taught wherein said task is one of plurality of repeatable operations, said task including a plurality of sub-operations, wherein one of said sub-operations is said portion for which said manager approximates the result (0136, lines 1-12, repeatable operations are anticipated because there is nothing to stop a task from occurring more than once and with respect to sub-operations by the nature of grid computing, a single operation is broken down into smaller

operations to be carried out by the nodes on the grid), and wherein an approximation of said sub-operation introduces a predefined accepted level of error to a performance of said task (0008, lines 7-10, it is inherent that if there is a fault tolerance, then there must be an associated pre-determined tolerance level)

11. As for claim 9, the combination of Verbeke, Beeston, and Anderson taught all of the limitations described in claim 6. In addition, Verbeke taught wherein in absence of said manager approximating the result, said task would situationally have to be restarted and all of said sub-operations performed by said plurality of clients repeated (0142 all, where redundant task at node failure is restarting and repeating).

12. With respect to claim 12, Verbeke taught a system of grid computing (0013, lines 1-3) comprising: a manager operable to define a computing task and assign a portion of said task to each of a plurality of clients connected to said manager via a network (0136, lines 1-12). But Verbeke doesn't explicitly state said manager further operable to approximate a result of said portion if said client fails to return said result to said manager. Wherein said manager is configured to determine a client failure to return said results based upon at least one condition selected from a group of conditions consisting of: a receipt of a message indicating that the client is no longer connected to the network, a receipt of a message from the client indicating that said result is not forthcoming, and an expiration of a previously defined time delay for said client to provide said result, wherein said manager is configured to approximated said result

based at least in part upon at least one previous result received from said client that failed to return said result or based upon an initial value conveyed to said client that failed to return said result from the manager as part of the assigned task for which the client has failed to return said result, and wherein said manager is configured to make a programmatic decision as to whether to approximate said result when said client fails to return it or whether to re-execute said task to generate said result based upon whether a computed degree of error computed for approximating said result exceeds a previously defined threshold for an acceptable degree of error during approximations.

However, Beeson did teach said manager further operable to approximate a result of said portion if said client fails to return said result to said manager. Wherein said manager is configured to determine a client failure to return said results based upon at least one condition selected from a group of conditions consisting of: a receipt of a message indicating that the client is no longer connected to the network, a receipt of a message from the client indicating that said result is not forthcoming, and an expiration of a previously defined time delay for said client to provide said result (0056, lines 1-10, where the data block is estimated and thus, the resulting recovered data within the block is approximated and where an error condition indicates a result not forthcoming) and wherein a programmatic decision by the manager as to whether to approximate said result when said client fails to return it or whether to re-execute said task to generate said result is made based upon whether a computed degree of error computed for approximating said result exceeds a previously defined threshold for an acceptable degree of error during approximations (0056, lines 1-5, where the pre-

defined threshold of error is zero). Both the systems of Verbeke and Beeston are directed towards systems for distributed computing management and therefore It would have been obvious to a person of ordinary skill, in the art at the time of the invention, to modify the teachings of Verbeke, in order to use data approximation, as taught by Beeston, as a method of overcoming failure to deliver result. Doing so would provide an efficient procedure of correcting errors due to failure when using the Verbeke device to perform the sorts of calculations implemented by the applicant's device.

The combination of Verbeke and Beeston, however, did not explicitly state wherein said manager is configured to approximated said result based at least in part upon at least one previous result received from said client that failed to return said result or based upon an initial value conveyed to said client that failed to return said result from the manager as part of the assigned task for which the client has failed to return said result. However, Aridor did teach wherein said manager is configured to approximated said result based at least in part upon at least one previous result received from said client that failed to return said result or based upon an initial value conveyed to said client that failed to return said result from the manager as part of the assigned task for which the client has failed to return said result (column 1, lines 26-31, where the redundant calculations are part of the SETI@home's cyclic calculation processes) or based upon an initial value conveyed to said client from the manager as part of the assigned task for which the client has failed to return said result (column 1, lines 26-31, where a redundant result is a result that is previous with respect to the one that is being checked at the time).

All of the systems of Verbeke, Beeston, and Anderson are directed towards systems of distributed computing and management thereof and therefore, it would have been obvious to a person of ordinary skill in the art, at the time of the invention, to modify the combination of Verbeke and Beeston, in order to utilize multi-cyclic calculations, as taught by Anderson, in order to broaden the applications that may be utilized by said system; thus, improving overall marketability.

13. With respect to claim 13, Verbeke taught a computer-readable storage medium comprising: a plurality of computing instructions for a manager connectable to a plurality of clients via a network (0136, lines 1-12, where computing instructions are required to operate the system). But Verbeke doesn't explicitly state being further operable to approximate a result of said portion if said client fails to return said result to said manager. Wherein said computer instructions are configured to determine a client failure to return said results based upon at least one condition selected from a group of conditions consisting of: a receipt of a message indicating that the client is no longer connected to the network, a receipt of a message from the client indicating that said result is not forthcoming, and an expiration of a previously defined time delay for said client to provide said result, wherein said manager is configured to approximated said result based at least in part upon at least one previous result received from said client that failed to return said result or based upon an initial value conveyed to said client that failed to return said result from the manager as part of the assigned task for which the client has failed to return said result, and wherein said manager is configured to make a

programmatic decision as to whether to approximate said result when said client fails to return it or whether to re-execute said task to generate said result based upon whether a computed degree of error computed for approximating said result exceeds a previously defined threshold for an acceptable degree of error during approximations.

However, Beeson did teach computer instructions further operable to approximate a result of said portion if said client fails to return said result to said manager. Wherein said manager is configured to determine a client failure to return said results based upon at least one condition selected from a group of conditions consisting of: a receipt of a message indicating that the client is no longer connected to the network, a receipt of a message from the client indicating that said result is not forthcoming, and an expiration of a previously defined time delay for said client to provide said result (0056, lines 1-10, where the data block is estimated and thus, the resulting recovered data within the block is approximated and where an error condition indicates a result not forthcoming) and wherein a programmatic decision by the manager as to whether to approximate said result when said client fails to return it or whether to re-execute said task to generate said result is made based upon whether a computed degree of error computed for approximating said result exceeds a previously defined threshold for an acceptable degree of error during approximations (0056, lines 1-5, where the pre-defined threshold of error is zero). Both the systems of Verbeke and Beeston are directed towards systems for distributed computing management and therefore It would have been obvious to a person of ordinary skill, in the art at the time of the invention, to modify the teachings of Verbeke, in order to use data approximation,

as taught by Beeston, as a method of overcoming failure to deliver result. Doing so would provide an efficient procedure of correcting errors due to failure when using the Verbeke device to perform the sorts of calculations implemented by the applicant's device.

The combination of Verbeke and Beeston, however, did not explicitly state wherein said computer instructions is configured to approximated said result based at least in part upon at least one previous result received from said client that failed to return said result or based upon an initial value conveyed to said client that failed to return said result from the manager as part of the assigned task for which the client has failed to return said result. However, Aridor did teach wherein said manager is configured to approximated said result based at least in part upon at least one previous result received from said client that failed to return said result or based upon an initial value conveyed to said client that failed to return said result from the manager as part of the assigned task for which the client has failed to return said result (column 1, lines 26-31, where the redundant calculations are part of the SETI@home's cyclic calculation processes) or based upon an initial value conveyed to said client from the manager as part of the assigned task for which the client has failed to return said result (column 1, lines 26-31, where a redundant result is a result that is previous with respect to the one that is being checked at the time).

All of the systems of Verbeke, Beeston, and Anderson are directed towards systems of distributed computing and management thereof and therefore, it would have been obvious to a person of ordinary skill in the art, at the time of the invention, to

modify the combination of Verbeke and Beeston, in order to utilize multi-cyclic calculations, as taught by Anderson, in order to broaden the applications that may be utilized by said system; thus, improving overall marketability.

14. As for claim 14, the combination of Verbeke, Beeston, and Anderson taught all of the limitations described in claim 13. In addition, Verbeke taught wherein said task is one of plurality of repeatable operations, said task including a plurality of sub-operations, wherein one of said sub-operations is said portion for which said manager approximates the result (0136, lines 1-12, repeatable operations are anticipated because there is nothing to stop a task from occurring more than once and with respect to sub-operations by the nature of grid computing, a single operation is broken down into smaller operations to be carried out by the nodes on the grid), and wherein an approximation of said sub-operation introduces a predefined accepted level of error to a performance of said task (0008, lines 7-10, it is inherent that if there is a fault tolerance, then there must be an associated pre-determined tolerance level).

15. As for claim 15, the combination of Verbeke, Beeston, and Anderson taught all of the limitations described in claim 14. In addition, Verbeke taught wherein in absence of said manager approximating the result, said task would situationally have to be restarted and all of said sub-operations performed by said plurality of clients repeated (0142 all, where redundant task at node failure is restarting and repeating).

16. Claims 4-5, 7, 10-11, and 16-18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Verbeke, in view of Beeston, in view of Anderson, and in further view of Aridor et al. (Pre-Grant Publication No. US 2002/0038301 A1), hereinafter Aridor.

17. As for claim 4, the combination of Verbeke, Beeston, and Anderson taught all of the limitations described in claim 3. In addition, Beeston taught wherein a programmatic decision by the manager as to whether to approximate said result when said client fails to return it or whether to re-execute said task to generate said result is made based upon whether a computed degree of error computed for approximating said result exceeds a previously defined threshold for an acceptable degree of error during approximations (0056, lines 1-5, where the pre-defined threshold of error is zero).

However, the combination of Verbeke, Beeston, and Anderson did not explicitly state wherein said task is an n-body type problem. On the other hand, Aridor taught wherein said task is an n-body type problem (0258, lines 1-7). All of the systems of Verbeke, Beeston, Anderson, and Aridor are directed towards systems of distributed computing and management thereof and therefore It would have been obvious to a person of ordinary skill, in the art at the time of the invention, to modify the combination of Verbeke, Beeston, and Anderson, in order to perform n-body problems, as taught by Aridor. Calculating n-body type problems was one of the vast uses for computer technology that was available at the time of the invention.

18. As for claim 5, the combination of Verbeke, Beeston, Anderson, and Aridor taught all of the limitations described in claim 4 above. In addition, Aridor taught wherein said n-body type problem is performed using the Barnes-Hut operation (0269, lines 1-4).

19. As for claim 7, the combination of Verbeke, Beeston, and Anderson taught all of the limitations described in claim 6 above. However, the combination of Verbeke, Beeston, and Anderson did not explicitly state the additional step of, prior to said outputting step, of repeating all foregoing steps until a desired level of performance of said task is achieved, wherein during said repeating of all foregoing steps, all portions of said task assigned to clients that failed to return said results are assigned to other ones of said clients. However, Aridor did teach the additional step of, prior to said outputting step, of repeating all foregoing steps until a desired level of performance of said task is achieved, wherein during said repeating of all foregoing steps, all portions of said task assigned to clients that failed to return said results are assigned to other ones of said clients (0269, lines 1-4, It is the purpose of the Barnes-Hut algorithm to perform multiple steps of reducing grid size of the algorithmic squares in order to find the desired position. Furthermore, in a grid computing system, it is standard practice to redistribute the assignments of failed tasks). All of the systems of Verbeke, Beeston, Anderson, and Aridor are directed towards systems of distributed computing and management thereof and therefore It would have been obvious to a person of ordinary skill, in the art at the time of the invention, to modify the teachings of Verbeke, Beeston, and Anderson,

in order to perform n-body problems, as taught by Aridor. Calculating n-body type problems was one of the vast uses for computer technology that was available at the time of the invention.

20. As for claim 10, the combination of Verbeke, Beeston, and Anderson taught all of the limitations described in claim 9 above. However, the combination of Verbeke, Beeston, and Anderson did not explicitly state said task is an n-body type problem. Aridor taught wherein said task is an n-body type problem (0258, lines 1-7). All of the systems of Verbeke, Beeston, Anderson, and Aridor are directed towards systems of distributed computing and management thereof and therefore It would have been obvious to a person of ordinary skill, in the art at the time of the invention, to modify the teachings of Verbeke, Beeston, and Anderson, in order to perform n-body problems, as taught by Aridor. Calculating n-body type problems was one of the vast uses for computer technology that was available at the time of the invention.

21. As for claim 11, the combination of Verbeke, Beeston, Anderson, and Aridor taught all of the limitations described in claim 10 above. In addition, Aridor taught wherein said n-body type problem is performed using the Barnes-Hut operation (0269, lines 1-4).

22. As for claim 16, the combination of Verbeke, Beeston, and Anderson taught all of the limitations described in claim 14 above. However, the combination of Verbeke,

Beeston, and Anderson did not explicitly state said task is an n-body type problem. However, Aridor did teach wherein said task is an n-body type problem (0258, lines 1-7). All of the systems of Verbeke, Beeston, Anderson, and Aridor are directed towards systems of distributed computing and management thereof and therefore It would have been obvious to a person of ordinary skill, in the art at the time of the invention, to modify the combination of Verbeke, Beeston, and Anderson, in order to perform n-body problems, as taught by Aridor. Calculating n-body type problems was one of the vast uses for computer technology that was available at the time of the invention.

23. As for claim 17, the combination of Verbeke, Beeston, and Anderson taught all of the limitations described in claim 16 above. In addition, Aridor taught wherein said n-body type problem is performed using the Barnes-Hut operation (0269, lines 1-4).

24. As for claim 18, the combination of Verbeke, Beeston, and Anderson taught all of the limitations described in claim 13 above. However, the combination of Verbeke, Beeston, and Anderson did not explicitly state said task is selected from the group consisting of determining a) movements of masses in a given space; b) charges of particles; c) electromagnetic fields; d) fluid dynamics in a fluid system; e) weather patterns; f) equity fluctuations in financial markets; and g) movements of objects in multi-player games.

However, Aridor did teach wherein said task is selected from the group consisting of determining a) movements of masses in a given space; b) charges of particles; c) electromagnetic fields; d) fluid dynamics in a fluid system; e) weather patterns; f) equity fluctuations in financial markets; and g) movements of objects in multi-player games (0269, lines 1-4, where the simulated motion of particles in a two-dimensional space due to gravitational forces is movements of masses in a given space). All of the systems of Verbeke, Beeston, Anderson, and Aridor are directed towards systems of distributed computing and management thereof and therefore It would have been obvious to a person of ordinary skill, in the art at the time of the invention, to modify the combination of Verbeke, Beeston, and Anderson, in order to perform n-body problems, as taught by Aridor. Calculating n-body type problems was one of the vast uses for computer technology that was available at the time of the invention.

Response to Arguments

25. Applicant's arguments with respect to claims 1-4, 6-9, and 12-18 have been considered but are moot in view of the new ground(s) of rejection.

26. In response to applicant's arguments on page 10, lines 12-16, applicant argues that "Verbeke teaches standard grid computing practices with respect to conveying computations to multiple client computers and having a manger compile results. Standard practice in the industry (grid computing) in absence of the Applicant's

disclosure was to re-calculate a failed result. There are no teaches presented or implied in either Penev or Verbeke for changing this industry practice." However, as the argument against Penev is now moot as new arts have been applied to address the amendment to claims, it can be seen throughout the specification (view the claim rejections for particular instances) that Beeston's systems comprises approximating data from failed/error results and not recalculating/re-doing the entire process.

Conclusion

27. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

(a) Nordin et al. (Patent No. US 7,054,910 B1), a system for data replication in a distributed network.

28. Any inquiry concerning this communication or earlier communications from the examiner should be directed to JOSEPH L. GREENE whose telephone number is (571)270-3730. The examiner can normally be reached on Monday - Thursday from 9:00 AM to 4:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, John Follansbee can be reached on (571) 272-3964. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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